

NOTE

Crophius disconotus (Say) (Hemiptera: Lygaeoidea: Oxycarenidae):
Southeastern Extension of the U.S. Range, with Rectification
of an Old Alabama Record

The nine North American species of *Crophius* Stål are mostly boreal and western (Ashlock and A. Slater 1988, Hoffman 1996). In addition, seven Neotropical species are known from Mexico to Peru and Argentina (Slater 1964, Slater and O'Donnell 1995). Hoberlandt (1987) tentatively synonymized *Crophius* with the Old World *Anomaloptera* Amyot and Serville. The synonymy was followed in the recent catalog of Palearctic Heteroptera; included in *Anomaloptera* were *A. bermani* Vinokurov, described in *Crophius* and known only from East Siberia, and the type species *A. helianthemi* Amyot and Serville, a mainly Mediterranean oxycarenid (Péricart 2001). Because the generic name *Crophius* continues to be used in North American literature (e.g., Scudder 1997, Maw et al. 2000, Sweet 2000), it is used herein, pending taxonomic reevaluation of Old and New World species of the two genera.

Crophius disconotus (Say) is an infrequently collected lygaeoid of the Oxycarenidae (*sensu* Henry 1997) that has been termed rare (Van Duzee 1894), rather rare (Torre-Bueno 1915), scarce (J. A. Slater and Baranowski 1978), and uncommon (Sweet 2000). Although this species was described from "Missouri" by Say (1832), no specimens from Missouri were available when Froeschner (1944) treated that state's lygaeid fauna.

Known in Canada from New Brunswick to the Yukon (Maw et al. 2000), *C. disconotus* is recorded in the western United States from Alaska, California, Colorado, Utah, and Wyoming (Ashlock and A. Slater 1988, Scudder 1997). Eastern U.S. records are mainly from New England, New York, and the mid-Atlantic states (Ashlock and A.

Slater 1988). The southern limit of its eastern range has been Alabama (Van Duzee 1917, Blatchley 1926, J. A. Slater 1964, Ashlock and A. Slater 1988), based on Van Duzee's (1910) record from "Banff Springs." In listing Heteroptera from the Yukon, Scudder (1997) followed Henry and Froeschner's (1988) catalog in recording general distributions for species. Scudder (1997), however, did not include the Alabama record for *C. disconotus* that was listed in the lygaeid chapter of the catalog (Ashlock and A. Slater 1988) and probably realized that Banff Springs referred to Alberta, Canada. This seed bug is listed from Alberta in the recent checklist of Canadian Heteroptera (Maw et al. 2000). The published southern limit of the range of *C. disconotus* in the East, therefore, is Blacksburg, Virginia, where an adult was taken on 3 July 1961 (Hoffman 1996).

The following records extend the known southeastern range of *C. disconotus*. I collected all specimens and have deposited voucher material in the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM).

USA: GEORGIA: Madison Co., Rt. 106, N of 11a, 11 Sept. 1996, 1 ♂, ex crown of *Eragrostis curvula*. NORTH CAROLINA: Buncombe Co., nr Craggy pinnacle, ca. 6 km SSE of Dillingham, ca. 1,735 m, 14 Sept. 2003, 1 instar IV, ex inflorescences of *Solidago arguta*; Haywood Co., Black Balsam Knob, ca. 1,860 m, 29 Sept. 2002, 1 ♂, 1 ♀, ex inflorescences/seed heads of *S. puberula*; 6 Oct. 2002, 14 ♂, 9 ♀, ex seed heads of *S. puberula*; Jackson Co., Rt. 64E, Cashiers, 25 Oct. 1998, 1 adult (not collected), ex crown of *E. curvula*; Mitchell Co., Roan Mountain, Carver's Gap, ca.

1,685 m, 31 Aug. 2003, 3 ♂, 1 ♀, ex basal leaves of *S. puberula*. TENNESSEE: Carter Co., Roan Mountain, Carver's Gap, ca. 1,685 m, 27 Oct. 2002, 5 ♂, 4 ♀, ex basal leaves of *S. puberula*; 31 Aug. 2003, 1 ♂, 1 ♀, ex basal leaves and 1 ♀ ex inflorescences of *S. puberula*.

Georgia, North Carolina, and Tennessee are new state records for *C. disconotus*. In the Southeast, I encountered most adults at higher elevations (1,685–1,860 m) in the southern Appalachians. Only one adult was found in the piedmont of Georgia (ca. 250 m), and *C. disconotus* was not observed in the mountains or piedmont of South Carolina despite extensive collecting. No specimens of this seed bug from Georgia, North Carolina, or South Carolina were found in collections at Clemson University (CUAC), North Carolina State University (NCSU), University of Georgia (UGCA), or the USNM.

My collections of adults and a fourth instar of *C. disconotus* from *Solidago* spp. (Asteraceae) support an association with goldenrod that has been mentioned by others (Van Duzee 1894; Torre-Bueno 1924, 1925; Sweet 2000). Nymphs have not been described, but a fourth instar of *C. disconotus* was beaten from the inflorescence of *S. arguta* Ait. in Buncombe County, North Carolina; the nymph molted once but died as a fifth instar. Native North American oxycarenids are thought to feed on members of the Asteraceae (Sweet 2000). Collections from oak (*Quercus*; Fagaceae) (Torre-Bueno 1912) and pine (*Pinus*; Pinaceae) (J. A. Slater and Baranowski 1978) likely represent resting records, as might the collection from *Polygonum sachalinense* F. Schmidt ex Maxim. (Polygonaceae; as "*Polygonum sachaliense*") (Procter 1946). This oxycarenid also has been found in root mats of *Polemonium pulcherrimum* Hook. (Polemoniaceae) (Seudder 1997).

Still in question is whether nymphs of *C. disconotus* develop on goldenrods. If so, do they feed on seed heads of their hosts and on fallen seeds, as do nymphs of a Palearc-

tic oxycarenid, *Metapoplax origani* (Kolenati), on asteraceous plants (Stehlík and Vavřínová 1996)? Do nymphs of *C. disconotus* feed on seeds of other Asteraceae or even those of other families? Further study also is needed to address other aspects of the bionomics of *C. disconotus*, such as voltinism, as well as resolve the taxonomic status of *Anomaloptera* and *Crophius* and evaluate the biogeography of a small group that seems in need of cladistic analysis.

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LITERATURE CITED

- Ashlock, P. D. and A. Slater. 1988. Family Lygaeidae Schilling, 1829 (= Infericornes Amyot and Serville, 1843; Myodoichidae Kirkaldy, 1899; Geocoridae Kirkaldy, 1902). The seed bugs and chinch bugs, pp. 167–245. In Henry, T. J. and R. C. Froeschner, eds. *Catalog of the Heteroptera, or True Bugs, of Canada and the Continental United States*. E. J. Brill, Leiden.
- Blatchley, W. S. 1926. *Heteroptera or True Bugs of Eastern North America with Especial Reference to the Faunas of Indiana and Florida*. Nature Publishing, Indianapolis, Ind., 1116 pp.
- Froeschner, R. C. 1944. Contributions to a synopsis of the Hemiptera of Missouri, Pt. III: Lygaeidae, Pyrrhocoridae, Piesmididae, Tingidae, Enicoccephalidae, Phymatidae, Ploiariidae, Reduviidae, Nabidae. *American Midland Naturalist* 31: 638–683.
- Henry, T. J. 1997. Phylogenetic analysis of the family groups within the infraorder Pentatomomorpha

- (Hemiptera: Heteroptera). *Annals of the Entomological Society of America* 90: 275–301.
- Henry, T. J. and R. C. Froeschner, eds. 1988. *Catalog of the Heteroptera, or True Bugs, of Canada and the Continental United States*. E. J. Brill, Leiden, 958 pp.
- Hoberlandt, L. 1987. Results of the Czechoslovak-Iranian entomological expeditions to Iran 1970, 1973 and 1977. *Heteroptera, Lygaeidae, Oxycarinae*. *Acta Entomologica Musei Nationalis Pragae* 42: 11–29.
- Hoffman, R. L. 1996. The insects of Virginia. No. 14. Seed bugs of Virginia (Heteroptera: Lygaeidae). Virginia Museum of Natural History, Martinsville, 111 pp.
- Maw, H. E. L., R. G. Foottit, K. G. A. Hamilton, and G. G. E. Scudder. 2000. Checklist of the Hemiptera of Canada and Alaska. NRC Research Press, Ottawa, 220 pp.
- Péricart, J. 2001. Superfamily Lygaeoidea Schilling, 1829; Family Lygaeidae Schilling, 1829, pp. 35–220. *In* Aukema, B. and C. Rieger, eds. *Catalogue of the Heteroptera of the Palaearctic Region*. Vol. 4. Pentatomomorpha I. Netherlands Entomological Society, Amsterdam.
- Procter, W. 1946. *Biological Survey of the Mount Desert Region*. Part VII. The Insect Fauna. Wistar Institute of Anatomy and Biology, Philadelphia, 566 pp.
- Say, T. 1832. Descriptions of new species of heteropterous Hemiptera of North America. New Harmony, Ind., 39 pp.
- Scudder, G. G. E. 1997. True bugs (Heteroptera) of the Yukon, pp. 241–336. *In* Danks, H. V. and J. A. Downes, eds. *Insects of the Yukon*. Biological Survey of Canada Monograph Series No. 2. Biological Survey of Canada (Terrestrial Arthropods), Ottawa.
- Slater, J. A. 1964. *A Catalogue of the Lygaeidae of the World*, 2 vols. University of Connecticut, Storrs, 1668 pp.
- Slater, J. A. and R. M. Baranowski. 1978. *How to Know the True Bugs (Hemiptera-Heteroptera)*. W. C. Brown, Dubuque, Iowa, 256 pp.
- Slater, J. A. and J. E. O'Donnell. 1995. *A Catalogue of the Lygaeidae of the World (1960–1994)*. New York Entomological Society, New York, 410 pp.
- Stehlík, J. L. and I. Vavřínová. 1996. Results of the investigations on Heteroptera in Slovakia made by the Moravian Museum (Lygaeidae I). *Acta Musei Moraviae, Scientiae Naturales* 80(1995): 163–233.
- Sweet, M. H. II. 2000. Seed and chinch bugs (Lygaeoidea), pp. 143–264. *In* Schaefer, C. W. and A. R. Panizzi, eds. *Heteroptera of Economic Importance*. CRC Press, Boca Raton, Fla.
- Torre-Bueno, J. R. de la. 1912. Three days in the pines of Yaphank. Records of captures of Hemiptera Heteroptera. *Canadian Entomologist* 44: 209–213.
- . 1915. Heteroptera in beach drift. *Entomological News* 26: 274–279.
- . 1924. On a few Heteroptera from Massachusetts. *Bulletin of the Brooklyn Entomological Society* 14: 48–51.
- . 1925. Methods of collecting, mounting and preserving Hemiptera. *Canadian Entomologist* 57: 6–10, 27–32, 53–57.
- Van Duzee, E. P. 1894. A list of the Hemiptera of Buffalo and vicinity. *Bulletin of the Buffalo Society of Natural Sciences* 5: 167–204.
- . 1910. Monograph of genus *Crophius* Stål. *Bulletin of the Buffalo Society of Natural Sciences* 9: 389–398.
- . 1917. *Catalogue of the Hemiptera of America north of Mexico excepting the Aphididae, Coccidae and Aleurodidae*. University of California Publications, Technical Bulletins, Entomology 2: 1–902.

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